

Response to Comment J1-61

There are specific measures in the Plan to avoid new road construction on all MWPZs (SSSs, headwall swales and deep seated landslides) and shallow rapid landslides. However where these areas cannot be avoided, the Plan provides exceptions only with the approval of an RG and RPF with experience in road construction in steep forested terrain.

See Master Response 17 for a discussion of road density.

Response to Comment J1-62

AHCP/CCAA (Section 6.3.2.4.1) requires Green Diamond to use a q/t value of -2.8, based on the preliminary calibrative work by Deitrich. That calibrative work did include two watersheds from the Korbel HPA Group. The Services recognize that a SHALSTAB calibration study was not performed specifically for the Plan and that a greater log q/t value would capture a greater percentage of the landscape and therefore landslide occurrences as well. However the cost/benefit of requiring a greater log q/t value compared to that for other possible conservation measures, such as roads, was inefficient and discouraging for both the Services and Green Diamond. Rather, the Plan proposes the “off-the-shelf” use of SHALSTAB in conjunction with a suite of other conservation measures for hillslope stability and other potential sediment sources such as roads and harvest related ground disturbance. See, e.g., AHCP/CCAA Sections 6.2.3 and 6.2.4. The relative importance of the SHALSTAB model must be considered in that context of the Operating Conservation Program as a whole. The percent of the watershed in SHALSTAB areas and the sediment contribution from SHALSTAB areas for the pilot watersheds are modeled and summarized in AHCP/CCAA Appendix F3 and Tables F3-3, F3-4, and F3-5.

Regardless of the specific log q/t value, the Plan does not propose any specific or enforceable capture rate of landslide occurrences. SHALSTAB is proposed merely as a screening tool to trigger specific field verification for headwall swale landforms by Green Diamond staff. SHALSTAB itself cannot identify headwall swales. Headwall swales can only be identified by direct observation. Headwall swale features outside SHALSTAB areas

limitations. Given the fact that watersheds within the Plan Area already have been roaded at least once, the Program allows too much discretion as written. This is especially true when one considers the Program does not describe trigger mechanisms for geologic reviews (aside from the RPF requesting one), nor does it describe how CGS fits into the review process and how much weight their recommendations would carry. Further, there is no discussion of how current road densities in the Plan Area would be factored into this prescription. Without this information, it is impossible to determine whether the Plan would protect aquatic species and their habitat from landslides caused by road construction in MWPZs. As written, the Plan provides less assurance than current FPRs, as amended by T&I Rules. Please explain why the Program does not establish limitations on road construction and reconstruction in MWPZs. Explain why the Program does not provide provisions for a geologic review by CGS or limitations based on, perhaps, the type of processes acting on the road or slope. These discussions should also place road construction or reconstruction in the context of road density.

6.2.2.2.1 Headwall Swale - Identification (pg 6-16): The Program proposes to use a log (q/T) threshold of -2.8 for SHALSTAB analysis. As this section correctly points out, a -2.8 is a generally accepted regional value from validation studies that captured 60 percent of actual sites when using a 10 meter DEM. However, most of the watersheds used for validation studies were in Mendocino County. Therefore, Simpson should validate SHALSTAB in the Plan Area to ensure the proposed log (q/T) would apply to the majority of the Plan Area. It would lend greater creditability to the proposed methods. After all, is 60 percent capture that great to begin with for a Plan that relies on SHALSTAB for the initial identification of such features? Please validate that the proposed threshold will capture at least 60 percent of known headwall features. For clarity, also please edit language on page 6-16, paragraph 1 to read, “... computer model analysis (>1/4 ac) using at least a 10m, or better, DEM...”

6.2.2.2.1 Headwall Swale - Identification (pg 6-16): We disagree that “appropriately trained field personnel” can identify, evaluate, and/or adjust boundaries to any geologic feature. Section 6.2 should clearly delegate those functions to a geologist or hydrologist. Please remove all references to RPFs or appropriately trained personnel performing such functions.

6.2.2.2.2 Headwall Swale - Default Prescriptions (6-16): The default prescriptions for headwall swales are not clear. What determines how large of an area within the headwall swale receives single tree selection? Paragraph 1 on page 6-87 refers to an “approved” geologic review. Who “approves” a geologic review? Paragraph 3 on page 6-87 states, “... tree retention should be greatest along the axis of the headwall swales and decrease upslope.” This statement is unenforceable and does not recognize the potential loss of retained trees by windthrow, nor is it mentioned in the Program on page 6-16. Because the default prescription is not subject to adaptive management, the prescription should be conservative. Our recommended prescription for single tree selection in SMZs (6.2.2.1.7) also applies to headwall swales. Please address these concerns and provide more detail in the Program.

Section 6.2.3 Road Management Measures (pg 6-19): The Program does not contain targets for how many miles of roads would be decommissioned or upgraded. Table 6-10 (pg. 6-93) suggests that about 40% or 1,500 miles of Simpson roads would be temporarily or permanently decommissioned. However, there is no comparable statement in Section 6.2 that commits to this

may be identified and protected as well (AHCP/CCAA Section 6.3.4.2.1). It is likely that most headwall swale type landforms in the Plan Area will be identified and managed accordingly since the entire Plan Area, including both inside and outside SHALSTAB areas, will incrementally evaluated in the field through THP process by appropriately trained personnel.

Response to Comment J1-63

The role of foresters and the practice of geology has been discussed in Master Response 13.

Response to Comment J1-64

Default prescriptions for headwall swales are described in AHCP/CCAA Sections 6.2.2.2.1 and 6.3.2.4.2. Field review for the characteristics described in AHCP/CCAA Section 6.3.2.4.2 will determine the area that would be subject to headwall swale prescriptions. The effects of implementint the covered activities on slope stability are discussed in AHCP/CCAA Sections 5, 6.3, and Appendix F. Discussion in AHCP/CCAA F1.2.1.5 estimates the relative effects of different silvicultural systems on slope stability.

The approval of geologic review will be part of the THP process and, therefore, subject to State standards of practice and review. Consequently, California regulatory agencies will approve or disapprove a geologic review that results in alternative prescriptions for headwall swale landforms.

Response to Comment J1-65

See Master Response 17.

Response to Comment J1-66

The Plan calls for Green Diamond to provide a total of \$37.5 million (to be inflation adjusted in 2002 dollars for each year of the acceleration period) during the first 15 years of the term of the Permits to treat high and moderate priority road-related sediment sites. An average of \$2.5 million will be provided each year and at least \$7.5 million will be provided during the first three years. Some money could be provided through the cooperative programs Green Diamond has with other parties such as the Yurok Indian tribes, to the extent that governing laws, regulations, and policies allow these funds to be used as mitigation under an ESA Permit. AHCP/CCAA Sections 6.2.3.2.1 and 6.3.3.2.5 discuss the mechanisms to be used and the prioritization approach that will be employed to allocate funds between THP and non-THP road work. Green Diamond's current road costs associated with the normal THP process have not been disclosed. However, Green Diamond estimates that, \$1 million of the \$2.5 million that would be used to treat high- and moderate-risk sites in the road implementation plan, will be spent on roads associated with THPs. This is projected to result in approximately 48 percent of the road-related sediment in the first 15 years of the Plan to be stabilized, as opposed to only 19 percent without the Plan.

Response to Comment J1-67

AHCP/CCAA Section 6.3.3.5 describes the analysis used to define an "unseasonably dry fall." The analysis examined the relationship between rainfall and stream flow response to determine the amount of rainfall that was needed to generate elevated and sustain stream flow above a summer base flow. Based on this relationship

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effort. Please provide a statement in Section 6.2 that describes and commits to the mile of roads that would be decommissioned or upgraded within each road work unit (RWU) or a statement that describes targeted road densities that would be achieved within the 15-year acceleration period and within the 50-year life of the Plan.

J1-66

6.2.3.2.1, No. 1 (pg 6-22): The Program states that Simpson would provide an average of \$2.5 million per year for the first 15 years, but does not state whether public grant funds would be included as part of the \$2.5 million. The plan should describe how \$2.5 million compares to Simpson's current budget for road management. The description should include costs for THP road work and other non-THP road maintenance work. Without these costs and disclosures, it is impossible to evaluate how the proposed action compares to current operations and whether the proposal provides meaningful assurances to aquatic resources. Please provide a discussion in the Plan that clearly identifies funding sources, compares current road costs with proposed costs and differentiates between work that would be part of the Program and work that would be associated with the normal THP process.

J1-67

6.2.3.3.1 Time of Year Restrictions (pg 6-23): The definition of an "unseasonably dry fall" does not provide sufficient water quality protection from rainfall and wet soil conditions. The criterion of 4 inches by October 15th is too high and there is no trigger identified to stop work between October 16th and November 15th. Rainfall records for Redwood Creek at O'Kane show that for the period 1984 through 2000, 15 out of the 16 years had less than 4 inches rainfall before October 15th, and would qualify as an "unseasonably dry fall." However, by November 15th, rainfall had exceeded 4 inches 12 of the 16 years, and half of the years had exceeded 6 inches (average = 8.1 inches; median = 6.2 inches; maximum = 18 inches). These records clearly show the increasing risk of higher rainfall during October 16 to November 15. Therefore, we strongly recommend that the "unseasonably dry fall" determination be based on no more than 2 inches of rainfall by October 15th AND no more than 3 inches rainfall by November 1st. This recommendation should also be applied to 6.2.3.4.2 Dry Fall (pg 6-25) and all timber harvest operations past October 15th.

J1-68

6.2.3.3.2 Watercourse Crossings (pg 6-24, No. 1): This states that, "Simpson will remove fill from all watercourse crossing." This statement is not clear in that it would allow for removal of a small amount of fill from every crossing without any particular merit. Please edit as follows: "Simpson will completely excavate all fill from watercourse crossings."

J1-69

6.2.3.3.2 Watercourse Crossings (pg 6-24, No. 4): Please edit as follows: "Appropriate erosion control measures such as seeding and mulching will be utilized to prevent surface erosion at excavated crossings." The same edits are needed in item 6.2.3.3.3, No. 2.

J1-70

6.2.3.4.2 Early Spring Drying (pg 6-25, No. 1): Please edit as follows: "Any watercourse crossings where significant surface flows could prevent effective diversion of flow around the work site will not be installed..."

J1-71

6.2.3.4.5 Design Flow (pg 6-26, No. 2): Please edit as follows for clarity: "Culverts that are functioning properly but are undersized according to the standard might not be replaced if all of the following are true: the existing culvert's capacity is within 15% of the design flow, the

developed between the Fieldbrook 4D Ranch rain gauge from October 1956 through May 1986 and the Little River stream gage near Trinidad for the same period, the week of October 9th through October 15th was the period when stream flow begins to increase above a summer base flow. The corresponding cumulative rainfall from September 1st to October 15th was 4 inches, which was considered the indicator when the soil first becomes saturated on average.

There may be an increased risk of a large rain event associated with conducting road work activities during an “unseasonably dry fall” period. As such, AHCP/CCAA Sections 6.2.3.3.1 and 6.2.3.4.2 (which are further described in AHCP/CCAA Sections 6.3.3.5.1 and 6.3.3.7.1) identify a trigger to cease road decommissioning and upgrading during an “unseasonably dry fall” period (when the 4 inches cumulative rainfall is reached or a National Weather Service forecasted rainfall amount will reach or exceed the 4 inch cumulative total). There are also additional measures to help reduce the risk of sediment impacts while conducting these activities during an unseasonably dry fall: (1) each project site must be completed that operational day with erosion control structures installed; or (2) if a site requires multiple days for completion, a long-range National Weather Service forecast of no rain for the next five days has been issued; and (3) sites that require multiple weeks for completion will not be started during the winter period unless there is an emergency situation.

Currently, the 4-inch cumulative rainfall that defines an “unusually dry fall” is being applied to the entire Plan Area. However, AHCP/CCAA Section 6.3.3.5.1 allows refinements to be made as more data with sufficient record length become available to examine the relationship between rainfall and stream flow responses.

Response to Comment J1-68

The Plan requires Green Diamond to excavate all of the stream crossings on decommissioned roads. The language in AHCP/CCAA Section 6.2.3.3.2 No.1 has been revised as follows:

“Green Diamond will remove the fill from the stream channel on all

watercourse crossings on decommissioned roads.”

The second and third points in AHCP/CCAA Section 6.2.3.3.2 describe the fill excavation in more detail: a) The excavation will extend down to the original channel bed, with the excavated channel at least as wide as the original channel, and b) The side slopes will be sloped back to the original or a stable angle and spoil material transported to a stable location.

Response to Comment J1-69

The language in AHCP/CCAA Section 6.2.3.3.2 No.4 has been revised as follows:

“Appropriate erosion control measures such as seeding and mulching will be utilized to ~~facilitate revegetation of~~ prevent surface erosion at excavated crossings.”

The language in AHCP/CCAA Section 6.2.3.3.3 No.2 has been revised as follows:

“Appropriate erosion control measures such as seeding and mulching will be utilized to ~~facilitate revegetation of~~ prevent surface erosion at excavated unstable areas.”

Response to Comment J1-70

The language in AHCP/CCAA Section 6.2.3.4.3 is clarified as follows:

“1) Class I watercourse crossings will not be installed or replaced; and 2) Any other watercourse crossings where significant surface flows could prevent effective diversion of flow around the work site will not be installed or replaced; and 3) Erosion control supplies are retained on-site and applied to each completed site by the end of that operational day.”

Response to Comment J1-71

The language in AHCP/CCAA Section 6.2.3.4.5 No.4 has been revised as follows:

“Culverts that are functioning properly but are undersized according to the standard might not be replaced if all of the following are true: the existing culvert’s capacity is within 15 percent of the design flow, the headwater depth to culvert diameter ratio at fill overtopping is greater than or equal to 2.0, and the channel is not transporting significant amounts of sediment, based on information from road inventories or current observations.”

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Response to Comment J1-72

The language in AHCP/CCAA Section 6.2.3.4.7 No.1 has been revised as follows:

“Green Diamond will ~~upgrade~~ use the same installation standards for new roads when replacing washed out culverts ~~and those replaced, upgrading existing culverts, or replacing culverts on previously temporary decommissioned roads to the same installation standards as new roads.~~”

Response to Comment J1-73

The language in AHCP/CCAA Section 6.2.3.5.2 No.1 has been clarified as follows:

“Green Diamond will not construct or rock new roads during the winter period (October 16th through May 14th).”

Response to Comment J1-74

Temporary roads are typically outsloped with rolling dips (AHCP/CCAA Section 6.2.3.5.8). Outsloped road surfaces do not always hold up well on mainline roads due to springs and groundwater interception and, therefore, such roads require a crowned road surface with inside ditches to maintain a stable road surface for hauling. AHCP/CCAA Section 6.2.3.5.7 provides the flexibility to use both outsloped and crowned road construction for mainline and secondary roads as appropriate. However, since crowned roads would be built with inside ditches and outsloped roads would be built with rolling dips, AHCP/CCAA Section 6.2.3.5.8 #2 has been revised as follows:

J1-71

headwater depth to culvert diameter ratio is greater than or equal to 2.0, and the channel is not transporting significant amounts of sediment, based on information from erosion inventories or current observations.”

J1-72

6.2.3.4.7 Washed Out or Replacement Culverts (pg 6-26, No. 1): Please edit as follows: “Simpson will upgrade washed out culverts, undersized, deteriorated, poorly installed culverts, and those replaced on previously temporary decommissioned roads to the same installation standards as new roads.”

J1-73

6.2.3.5.2 Seasonal Restrictions (pg 6-26): Please edit as follows: “Simpson will not construct or rock new roads during the winter period . . . ”

J1-74

6.2.3.5.8 Road Width Specifications (pg 6-27, No. 2): All new road construction should use outsloped road surfaces with no inside ditches, unless conditions require inside ditches. Please edit as follows: “Mainline and secondary roads will be outsloped with rolling dips and occasional turnouts. Crowned road construction and inside ditches may be used in sections where groundwater is intercepted by road construction or at known spring locations.”

J1-75

6.2.3.6.9 Minimum Culvert Sizes (pg 6-31): The minimum culvert diameter for any watercourse crossing should be 24 inches. Please edit as follows: “Simpson will install a minimum culvert size of 24 inches in all watercourse crossings on management roads, . . . ”

J1-76

6.2.3.6.15 Ditch Drain Discharge (pg 6-32, No. 3): Please edit as follows: “Outlets discharging onto areas prone to gullyng, slumping or land sliding will be avoided or provided with effective erosion protection measures.”

J1-77

6.2.3.11 Road and Landing Use Limitations (pg 6-38, No. 2): This item should read as follows, “Use of roads for log hauling, road decommissioning ... without resulting in 1) runoff of waterborne... watercourse, 2) pumping of road surface materials by traffic, or 3) creation of ruts greater than would be created by traffic following normal road watering, which transports surface material to a drainage facility that discharges directly into a watercourse.”

J1-78

6.2.6.1.3 SSS Triggers (pg 6-56): The Program's objective is to reduce sediment delivery from management-related landslides by 70 percent, but the Steep Streamside Slope (SSS) trigger requires the default prescriptions to be only 70 percent effective. We believe both targets are too low for a 50-year forecast of evenaged management in watersheds already sediment impaired. The Program should strive to eliminate management-related landslides by increasing the targets for the objective and prescription effectiveness to at least 90 percent. Further, SSS zones appear to be limited to reaches without floodplains. Please justify the low objective and efficiency targets, and clearly state whether or not SSS zones could be established along floodplains.

J1-79

6.2.6.3 Adaptive Management Reserve Account (AMRA) (pg 6-57): The opening AMRA balance of 1,500 acres is insufficient and does not build confidence in the Plan's ability to meet stated goals. It is based on “Current GIS data” which can easily underestimate actual conditions, and ground conditions in the Plan Area are extremely uncertain because of the limited

“Mainline and secondary roads will typically have a combination of outsloped (with rolling dips) and crowned (with inside ditches) road construction where appropriate, and occasional turnouts. ~~Wherever feasible, roads will be located on or close to ridge tops or on benches where the road prism can be built with the least soil displacement.”~~

Response to Comment J1-75

AHCP/CCAA Section 6.2.3.6.9 has been revised as follows:

“Green Diamond will install a minimum culvert size of 24 inches in ~~Class II~~ all watercourse crossings on management roads, except for springs and seeps where such size would be unnecessary or impractical.”

Response to Comment J1-76

AHCP/CCAA Section 6.2.3.6.15 No.3 has been clarified as follows:

“Outlets discharging onto erosion prone areas ~~prone to gully, slumping or land sliding~~ will be avoided or provided with effective erosion protection measures.”

Response to Comment J1-77

The Plan, as written, focuses on issues that may result in impacts to the watercourse. A rut created in a road surface may not always result in sediment delivery to a watercourse. To restrict road usage when there is no or little opportunity for delivery of sediments into the watercourse would be overly and unnecessarily conservative. It is not expected that imposing limitations such as this would provide any additional protection to water quality in the receiving waters. As stated in the Plan, regardless of the source of sediment or the time of year, Green Diamond must cease operations if there is a visible increase in turbidity in any ditch or road surface that drains into a Class I, II or III watercourse (AHCP/CCAA Section 6.2.3.11.1). Operations requiring use of the road would not resume if the use of the road could result in runoff of waterborne sediment in amounts sufficient to cause a visible increase in

turbidity in any ditch or road surface that drains into a Class I, II or III watercourse (AHCP/CCAA Section 6.2.3.11.1).

Response to Comment J1-78

A reasonable attempt was made to bias the conservation measures toward the areas where conservation measures would likely have the most beneficial effect for the covered species. As a result, conservation measures for roads (AHCP/CCAA Section 6.2.3) were emphasized in the Plan and conservation measures for steep streamside slopes (AHCP/CCAA Section 6.2.2.1) were assigned a slightly lower performance bar, though they remain an important aspect of the Operating Conservation Program as a whole. Correspondingly, where conservation measures would be less likely to have a meaningful effect, such as on large deep-seated landslides, the measures have a still lower assumed effectiveness standard. Tables in AHCP/CCAA Appendix F-3 show the relative sediment contribution due to management from MWPZs for both pre-Plan and post-Plan conditions.

SSS zones do not apply to flood plains. A steep slope is considered an SSS only if it descends directly to the watercourse transition line or CMZ. As described in AHCP/CCAA Sections 6.2.1.1 and 6.3.1.4.1, flood plains will be protected by extended RMZs as necessary plus an additional increment of slope distance (30 to 50 feet), depending on slope gradient.

Also see Master Response 16.

Response to Comment J1-79

The AMRA, including how uncertainty in current GIS knowledge is addressed, how the AMRA is funded, its opening balance and how it may change, and how it would be used under the Plan to benefit the covered species and their habitats is discussed in AHCP/CCAA Sections 6.2.6.3 and 6.3.6.2, as well as in Master Response 15. The Services have found that the AMRA is adequate for the purposes provided in the Plan. Regarding Plan enforceability, see Master Response 14. Regarding dispute resolution, see the response to Comment J1-16.

Response to Comment J1-80

The recurrence interval for a particular flow event is the average time between when a flow of a particular magnitude is equaled or exceeded. The 100-year flood identified as an unforeseen circumstance has a recurrence interval of 100 years (AHCP/CCAA Section 6.2.9.4). The exceedance probability of a flow is the probability that a flow of that magnitude will be equaled or exceeded in any one year. Since the 100-year flood happens, on average, once in 100 years, the probability that it will occur in any given year is 1/100 or 1 percent. Based on statistical theory, it is also possible to calculate the probability of a particular event occurring over a longer period. The following equation can be used to determine the probability of a flood (Q) with a 100-year recurrence interval (T) occurring over a 50-year time period (n): $Q = 1 - (1 - 1/T)^n$. The commenter is correct in calculating the probability of a 100-year flood event to occur over the 50-year life of the Plan. However, a 40 percent probability of occurrence still is not a high percentage. This is less than a 1 in 2 chance of occurring. As such, the Services do not consider a 40 percent probability to be a reasonably foreseeable occurrence that would warrant supplemental prescriptions.

Response to Comment J1-81

The assertion indicates that the commenter may have viewed this single criterion in isolation and did not consider any of the other riparian conservation measures (see AHCP/CCAA Section 6.2.1). The scenario set forth in the comment is unlikely for multiple reasons, including:

J1-79

assessments completed thus far. The SSS widths and resulting RSMZs and SMZs are based on limited data and analysis and appear too narrow, especially for Redwood Creek. The Effective Monitoring Programs will not produce meaningful results for many years, and Adaptive Management changes will not occur "unless there is sufficient balance in the AMRA to make the change" (Section 6.2.6, pg 6-54). The Services' participation in the review of monitoring and analysis methods and prescription development is not clear (it appears restricted), and the IA presents a dispute resolution process that does not ensure resolution without court actions, which are unlikely. As presented, the AHCP appears more concerned with limiting the company's future liabilities from monitoring results than providing a strong commitment to adaptive management. The insufficient AMRA dilutes the Plan's commitment to adaptive management. Given these concerns, please explain and justify how 1,500 fully stocked acres can represent an adequate AMRA for SMZs.

J1-80

6.2.9.4 Floods (pg. 6-62): The Plan states, "A flood that is equal or great in magnitude than a 100-year recurrence interval event is not reasonably foreseeable during the term of this plan..." The probability of a 100-year flood occurring during a 50-year time period is: $Q = 1 - (1 - 1/T)^n$ where n is the period of time and T is the recurrence interval, or 40%. Thus, a 100-year flood should be considered a foreseeable circumstance. All analyses based on this incorrect assumption should be repeated.

J1-81

6.3. Rationale (pg. 6-66): "No trees within the RMZ will be harvested which are judged likely to recruit to the watercourse." We are concerned that this provision would encourage the harvest of trees just before they're tall enough to be considered "recruitable."

J1-82

6.3.1.4.1 Channel Migration Zones (pg 6-73 and 6-74): The definition of channel migration zones (CMZs) and the methods used to delineate them in the field are unclear. It is stated in the Plan that CMZs "generally correspond to the modern floodplain, but can also include river terraces subject to significant bank erosion (NMFS, 2000)." Experience has shown that delineating the bankfull channel (used to delineate the floodplain) and subsequent applications of CMZ definitions have been fraught with controversy and differences of professional opinion (e.g., Pacific Lumber Co. HCP). Such controversy has led to delays in THP review and approval and expensive consultation with outside experts. To minimize controversy and delays, it is necessary to more explicitly define CMZs (e.g., they include the modern floodplain and adjacent areas, e.g., river terraces, hillslopes subject to fluvial erosion [see 'channel bank failures' in glossary, Section 10]).

The Plan states that CMZs will be delineated property-wide over a five-year period. In the meantime, how will CMZs be delineated in individual THPs?

The Plan also states that CMZs will be "modified if necessary". We recommend that the Plan explicitly state the rationale for modification of CMZs and the methods of doing so.

J1-83

6.3.2.2.1 Assumptions (pg 6-75, p4): The fourth assumption used to identify slope stability hazards and measures is partially correct, but should be clarified. While the issue of a "tested" landscape is acknowledged, significant storms have not occurred frequently enough in all watersheds in the Plan Area to assume that most areas have been tested. In Redwood Creek,

1. With the potential exception of cable rows being cut during commercial thinning operations, only a single entry is allowed in the RMZ during the life of the Plan and the “likely to recruit” trees would be evaluated at the time of entry,
2. There would be no incentive for Green Diamond to employ the single entry to harvest a few small trees, (the overstory canopy retention standards only allow a very small portion of the trees in the RMZ to be harvested), and
3. Tree height is not a primary consideration for “recruitability”, since functional LWD is most likely to come from the first 30 meters of the stream band.

See also Master Response 18, regarding riparian widths, and Master Response 5, regarding likelihood to recruit.

Response to Comment J1-82

It is very difficult to develop a precise definition of a channel migration zone (CMZ) which would be descriptive in all possible cases. CMZs are unique geomorphic features that are not easily characterized by a simple definition. Morphological features such as stream gradient, side slopes, bed material, and floodplain width influence the likelihood and rate of channel migration. Because of the complex nature of CMZs, the Plan proposes field verification of all Class I CMZs following the initial analysis with GIS, aerial photographs, maps and historical field information. The field verification of all CMZs would be conducted by a team of experts from Green Diamond and the Services. Ultimately, the CMZs would be flagged in the field and mapped in Green Diamond’s GIS system within the first 5 years of the Plan. The initial work would focus on areas where THPs are likely to be laid out in the immediate future. For any lands added to the Plan Area after the end of the third year, Green Diamond will complete mapping within two years of the addition. See AHCP/CCAA Section 6.2.1.8.2, as further described in AHCP/CCAA Section 6.3.1.4.1.

Floodplains are not proposed to be “modified if necessary.” In the Plan,

initial screening to define floodplains would be to apply twice the maximum bankfull depth to determine the width of the floodplain. In some cases, this approach would overestimate the extent of the floodplain, and in others it would underestimate it. The purpose of the field verification process is to make any necessary adjustments to the floodplain definition following the initial definition.

Response to Comment J1-83

Slopes used for comparative purposes to determine the relative landslide potential of a given slope include, but may not be limited to, the following:

- The slope in question. Generally speaking, the morphology and other geologic characteristics of most hillslopes will provide insight to a trained observer into the dominant slope processes that govern a given site. Depending on site specific geologic conditions, it is common for slopes to behave similarly in the present and future as they have in the past.
- Slopes of similar geologic character to the subject slope, including but not limited to composition, structural orientation, gradient, elevation or slope position, aspect, and hydrology.
- Slopes in the area surrounding the subject slope because they are commonly of similar geologic character to the subject slope. These criteria for slope comparison may be used for the SSS.

Response to Comment J1-84

As described in AHCP/CCAA Section 6.3.2.6, shallow rapid landslides are typically characterized by an arcuate headscarp and somewhat distinct side scarps that can be approximately 1 to 10 feet deep, a partly or fully depleted source area and transport reach (commonly a bare scar), and a deposition zone, which may be subdued or eroded away. Debris slides are one type, perhaps the dominant type, of shallow rapid landslides. Not all shallow landslides would occur in MWPZs because the MWPZs are limited to a portion of the landscape, not the entire landscape. Existing shallow rapid landslides in MWPZs such as SSS or headwall swales for example would be subject to default prescriptions described for shallow rapid landslides (see AHCP/CCAA Sections 6.2.2.4 and 6.3.2.6) and SSS areas (see AHCP/CCAA Sections 6.2.2.1 and 6.3.2.3.4) unless a geologic report by a California RG prescribes a more cost effective alternative. Shallow rapid landslides that occur outside prescribed MWPZs would be subject to the conservation measures for shallow rapid landslides as described in AHCP/CCAA Sections 6.2.2.4 and 6.3.2.6 if they have a reasonable potential to deliver sediment to a watercourse unless a geologic report by a California RG prescribes a more cost effective alternative.

Response to Comment J1-85

No monitoring program was established to examine headwall swales and deep-seated landslides specifically. However those types of landslides and landforms and the corresponding conservation measures are expected to be evaluated during the Mass Wasting Assessment (see AHCP/CCAA Sections 6.2.5.3.4

J1-83

discharge records for Orick reveal that a relatively mild hydrologic regime was in effect from 1975-1996. In 1996, a 12-year recurrence interval storm occurred, the first such event in more than 20 years. Thus, historical management can be used as an empirical example, but only if the root decay function (about 8-10 years after harvest) is matched with stressor storms (probably greater than a 25-year event) in similar terrain and underlying geology. Please expand the discussion in Section 6.2 to clarify the type of areas and methods that would be used for comparison in future studies.

J1-84

6.3.2.2.2 Mass Wasting Prescription Zones (pg 6-75): Please explain why some shallow-rapid landslides do not fall into Mass Wasting Prescription Zones. It is not clear how this affects prescriptions and methods. How do shallow-rapid features differ from shallow debris slides? Shallow-rapid landslides are not described in Volume 2, Appendix B, or in the California Geological Survey Note 50.

J1-85

6.3.2.2.2 Steep Streamside Slopes and Headwall Swales (pg 6-76, p3&4): According to the Program, default prescriptions for headwall swales and deep seated slides are not subject to adaptive management. We find this peculiar and there is no explanation given for this strategy. Please explain and justify this limitation in the Program.

J1-86

6.3.2.2.4 Slope Stability Monitoring and Assessment (pg 6-77, p5): We agree that a Mass Wasting Assessment (MWA) is necessary to better understand the relationships between land use and landslide processes, but the proposed assessment lacks a critical first step. The first step of the assessment should identify and map landslide-prone terrain across the entire Plan Area, including Additions, in the first five years. Please explain why a Plan Area-wide assessment of landslide-prone terrain is not being proposed as a first step in the MWA. Without this step, the MWA cannot meet its stated goals nor can it assist RPFs when preparing THPs.

J1-87

6.3.2.3.3 Steep Streamside Slopes: Slope Distance (pg 6-80, p5): A cumulative sediment delivery volume of 60 percent was used as a threshold value for all areas except the Coastal Klamath HPA. The value appears inconsistent with the SSS goal to reduce management-related landslide delivery by 70 percent, which we believe is too low. We acknowledge the additional risk reduction from plotting total sediment volume with distances but, given the uncertain and limited assessment (see next comment regarding Figure 6-4), it does not justify the 60 percent.

J1-88

6.3.2.3.3 Steep Streamside Slopes: Slope Distance (pg 6-80): Figure 6-4 forms the basis to default maximum slope widths for Class I and Class II streams. We acknowledge the difficulty of collecting and assembling these types of data, but we believe the analysis in Figure 6-4 is incomplete and it is not possible to evaluate the appropriateness of the default distances based on the analysis. Since the locations of measured slides used in the analysis are not disclosed, landslide sampling might have been biased towards smaller features because of limited access and time. Class I and Class II-2 streams are grouped into one category for most HPAs. The fact that maximum slope width for Class I and Class II-2 streams in the Korbel HPA are the same (200 feet) is a major concern.

J1-89

Also, the data and discussions do not describe how much material was perched above headscarps, or the potential for landslide enlargement. Based on mapping the Redwood Creek

and 6.3.5.4.4). Because these types of landslides and landforms move and fail in response to stochastic events, and because such movement or failure is dependent on site specific factors, they can require long time scales of monitoring and it is difficult to extrapolate results from one site to another. Additionally, some threshold of movement derived from empirical data would be required to trigger some management response through adaptive management. Because of the extent and methods of monitoring that would be required to collect adequate data for this purpose, specific adaptive management triggers and prescriptions for these MWPZs were rejected. Instead, deep-seated landslides and headwall swales are subject to alternative prescriptions, which in some circumstances may allow more harvesting than the default AHCP prescriptions and in other cases may require additional conservation based on the CFPRs.

Response to Comment J1-86

A Plan Area-wide assessment of “landslide-prone” areas is not being proposed as a first step in the mass wasting assessment because compilation of existing resources such as maps, reports, aerial photographs, and data must occur first and a geologic history for the region and the specific HPAs must be developed or adopted. Following that, an HPA scale or watershed scale geomorphic interpretation, including photo and field verification of existing landslide maps and original geologic mapping, including landslides and landslide prone terrain, can be developed. The mass wasting assessment also is discussed in AHCP/CCAA Sections 6.2.5.3.4.

Response to Comment J1-87

The 60 percent cumulative sediment delivery versus slope distance threshold used as part of the criteria to determine SSS distances is unrelated to the 70 percent effectiveness goal for reducing management related landslide sediment delivery from the SSS MWPZ. First, the 60 percent cumulative sediment delivery threshold used to determine SSS distances includes all landslide related sediment delivered to the watercourse network from streamside slopes, while the SSS

effectiveness goal is intended to measure the effectiveness of the conservation measures only with respect to the management-related landslide component from that MWPZ. Second, the distance that corresponds to the 60 percent total cumulative landslide related sediment delivery is based on crown scarp distances from watercourses; however, the conservation measures would also inherently apply to the lower portions of all landslides that originate from beyond that distance and deliver sediment to the watercourse network as well, which may be interpreted to impart an additional increment of slope stability and erosion mitigation to landslide areas. AHCP/CCAA Appendix F3, Tables F3-3, F3-4, and F3-5 show that according to Green Diamond’s sediment modeling, RSMZ measures are between 95 percent and 99 percent effective and SMZ measures are approximately 60 percent effective when evaluated in the context of management related landslide sediment delivery only. Based on that modeled effectiveness, a 70 percent effectiveness for the SSS conservation measures is an achievable and reasonable effectiveness requirement.

Also, see Master Response 16 regarding 70 percent as a measure of the effectiveness of the SSS prescriptions.

Response to Comment J1-88

See the response to Comment S2-19. The grouping of Class-I and II-2 watercourses is viewed more favorably by the Services as a credit to the proposed protection for some Class-II watercourses rather than as a discredit to the proposed protection for Class-I watercourses.

Response to Comment J1-89

The Plan recognizes inner gorges based on the definition presented in the current edition of the CFPRs and Note 50 of the California Department of Conservation, Division of Mines and Geology; however, there are no conservation measures specific to inner gorges proposed in the Plan. Using this definition, inner gorges are a subset of SSSs (i.e., all inner gorges are SSS, but not all SSS are inner gorges). SSS distances for the Korbel HPA are based on Green Diamond’s empirical field data of landslide volumes, slope gradients, and crown distances along slopes from watercourses for landslide occurrences in that region. The Services

recognize that these data are from a limited sample area and that they were extrapolated across the remainder of the respective HPA Group areas, which may not be uniformly compatible across those areas. However, the sample areas for the initial SSS data were biased towards areas of known instability. Also, the Plan provides for additional streamside-landslide data collection from each HPA, including the Redwood Creek HPA, specifically to determine more appropriate SSS threshold distances and slope gradients for each individual HPA. This process is part of the SSS delineation study described in AHCP/CCAA Section 6.2.5.3.2 and 6.3.5.4.2 that is scheduled for completion during the first seven years of the Plan.

Response to Comment J1-90

As stated in the Plan, a schedule such as the commenter requests has not been developed and cannot be presented. However, development of such a schedule would occur during the implementation of the road implementation plan according to the Road Work Unit prioritization tables (Tables 6-12 and 6-13 of the Plan). Not all the roads that could be decommissioned would be known until the road assessment is completed. The road assessment process would also help identify roads that should be decommissioned based on several criteria including existing conditions, road location, and other factors. Roads will be decommissioned as timber harvesting operations along them are completed. Other previously decommissioned roads may also be reopened as timber operations along them begin. Due to the change of status of roads from various categories, the distribution of harvesting operations over space and time, and the variation in time of treating roads within the various RWU, it would be speculative to specify the length of road that will be decommissioned within each RWU over a period of time. See generally Master Response 17, regarding road density in the Plan Area.

Response to Comment J1-91

See Master Response 18, which summarizes the Plan's rationale for the conclusion that the limited harvesting in Class I RMZs will not reduce the functionality of the riparian areas in terms of large woody debris (LWD) recruitment. See also the responses to Comments J1-21 and J1-41. As the Plan is implemented, further

J1-89

inner gorge from aerial photographs with limited ground validation, inner gorge slope distances along Redwood Creek can extend more than 500 feet from the main channel. A visual estimate from inner gorge mapping shows slope distances average about 350 feet. Mapped debris slides along Redwood Creek and its larger tributary channels can extend much farther than 200 feet from the main channel. As presented, the data do not present a convincing argument that the initial default maximum slope lengths would provide adequate landslide protection, especially in the Korbel HPA. Please discuss the above concerns and separate out the data for stream classes to allow a better assessment of default prescriptions.

J1-90

6.3.3.2.1. Transportation Plan (Pg 6-93, p1, s2): This item states that "A schedule will be developed for decommissioning these roads throughout the Plan Area." The schedule should be developed and presented in the Program for enforceability. If Simpson cannot describe specific roads to be decommissioned at this time, they should at a minimum describe lengths of road that would be decommissioned within each RWU over a period of time.

J1-91

7.2.3.3.1. Riparian Management Measures section (pg 7-16, p3, s3): This states that, "The small proportion of trees that will be harvested within RMZs will not only have a very low probability of contributing significant LWD to the stream but by removing some trees, the surrounding trees should have increased growth with even greater potential functionality in larger Class I watercourses." Please provide any data that would support this statement. Alternatively, it seems that removal of trees within the 150 foot wide Class I RMZ would decrease overall functionality of the stand. Removal of trees could potentially result in increase solar radiation, microclimate changes, increase water temperatures and perhaps decrease debris nutrient additions to the watercourse.

J1-92

10.2 Definitions (pg 10-13): The definition for "Watercourse Transition Line" is vague and unenforceable. What is meant by "perennial vegetation?" Please expand the definition to make it enforceable.

J1-93

Appendix C4 - Assessment of Erosion and Sedimentation in Class III Watercourses: The results show that mean LWD loading was 4.8 pieces per 100 ft., but control point frequency was only 0.93 per 100 ft. This implies that most LWD was not effective in retaining sediment (the definition of control point). According to the study, roots and large rock were notably rare in forming control points. It was unclear what controlled channel incision, bank erosion and sedimentation in these channels, if it was not LWD or roots or rock. Predominant channel substrate was noted during field work, but is not discussed in this section. The analysis discussed the percent of exposed active channel, but the definition (channel bed exposed by fluvial processes) is unclear. Is this the area of channel scoured to bedrock, in which case the bedrock would be a control point? On page C-102, the volume eroded from channels is underestimated by an order of magnitude: 0.81 ft³ x 100 ft of channel yields 81 ft³/100 ft of channel. The conclusions relating to channel adjustments and Class III streams responding to timber harvest are difficult to interpret without having a clearer understanding of control points, exposed active channel, and dominant substrate and bank material. Please explain.

J1-94

Appendix C 11.2 - Monitoring of Southern Torrent Salamander Populations (pg. C-239) and 11.3 Monitoring of Tailed Frog Populations (pg. C-245): Comparing sub-populations of southern

data and analysis will become available to validate the riparian measures and adjust them as appropriate.

Response to Comment J1-92

The Services believe that the definition for “watercourse transition line” is sufficiently clear to be enforceable and to provide a practical description of conditions that can be easily applied on the ground.

Response to Comment J1-93

The apparent lack of control points in these channels (Appendix C-4 of the AHCP/CCAA) was a result of the channels being largely choked with vegetation and small woody debris that prevented any fluvial scour or transport of sediment. Significant portions of these channels had no “exposed active channel,” which is defined as “channel bed exposed by fluvial processes.” In other words, if there was no exposed active channel, the channel was choked with vegetation and woody debris and there was no evidence that water had ever flowed in the channel. The confusion concerning control points results, because to make the surveys logistically feasible, only control points with a 6-inch or greater drop were recorded. There was no lack of control points in these channels, it was just that most of them were made up of small material rather than LWD.

Response to Comment J1-94

See response to Comment G10-48.

Response to Comment J1-95

Comment noted. The Services expect Green Diamond to analyze the data as described. See AHCP/CCAA Section 6.3.5.2.5.2 and Appendix D1.6.3.

Response to Comment J1-96

Paired sub-basins with “ideal” controls is always the preferred design for the monitoring work, but in many cases they simply do not exist. When no adequate controls exist, the only alternatives are to do no monitoring or to use a somewhat less robust experimental design. The monitoring program in the Plan is the proper methodology under the circumstances here.

Response to Comment J1-97

The established channel monitoring sites are identified in AHCP/CCAA Figure 6-9 as referenced in AHCP/CCAA Section 6.3.5.1.3. These sites are described further in AHCP/CCA Sections 4.3.4, 4.4.1.6.4, 4.4.2.6.4, 4.4.6.6.2, 4.4.8.6.4, 4.4.9.6.4, 4.4.10.6.4 and Appendix C3. After several years of implementing channel surveys, Green Diamond learned, as the commenter suggested, that measuring active and bankfull channel widths is too subjective. Green Diamond also concluded that cross-sectional surveys to track narrowing or widening of the channel and to monitor migration and morphology of gravel bars were preferred. These changes in the field protocols occurred while the Plan was being drafted, and so the full methodology for cross-sectional surveys was not included in Appendix D of the draft, but has been included in Appendix D in the final draft.

J1-94

torrent salamanders and changes in larval populations of tailed frogs between randomly selected sites in control and treated sub-basins appears to be a reasonable monitoring plan for both species. However, we do not concur that...“changes in sub-populations / changes in larval populations will be compared to the amount of timber harvest”... is an adequate substitute for controls. Standard controls are needed in order to make statistical comparisons, especially when it is unknown if minimal treatments (timber harvests) could have a significantly negative impact on salamander sub-populations or larval tailed frog populations.

J1-95

Appendix C 11.2.3 - Thresholds/Triggers (pg. C-240): This section state, “...but Simpson does not believe these data could be used to determine a reliable estimate of a populations trend.” This stated belief should not stop Simpson from analyzing the data. Under the above condition, we recommend a qualitative approach be used to determine a potential decline in the index of sub-population size across treatment and control sites.

J1-96

Appendix D.1.6.2.1 - Study Design (pg D-27): “Finding a large number of streams in paired sub-basins from which to randomly choose will be difficult.” Just because the preferred monitoring approach “will be difficult” is not an adequate reason to side step the preferred approach for an easier and less robust paired design. “When possible ... (treatment streams) will be paired with streams in sub-basins scheduled for little or no harvest (control streams). “Little harvest”, besides being vague, is different than “no harvest” and is not an adequate control.

J1-97

Appendix D.2.2.2.1 Class I Channel Monitoring (pg. D-39): This sections states, “Nine monitoring reaches are currently established...” Where are these reaches? Although they mention conducting cross-sectional surveys, the protocols for such surveys was not clearly described. Just measuring active channel width and bankfull width is not adequate because of the subjectivity involved by different observers. A nest of several full cross-sectional surveys in a monitoring reach is recommended, which would show increase or decreases in gravel bars (as opposed to just thalweg elevations determined from longitudinal profile surveys).

J1-98

Appendix E.2.2 Potential Effects on the Covered Species (pg E-7): Paragraph two states, “ The specific effects of altered hydrology”... and paragraph three, “ Southern torrent salamanders”... are unclear and deceptive. Both paragraphs include misleading sentences that contradict statements made and supported by the primary literature and found in other sections of the Plan (see App. C11.2, 11.3). We recommend presenting the paragraphs in a more rigorous, rather than speculative format and omitting the following sentences: 1) “However, this would not likely result in long-term changes in the habitat for the species”... 2) “The speculation is that increases in peak flow would be unlikely to have any negative impact on this species.” 3) “Since torrent salamanders live in aquatic sites with minimal flows, it seems likely that increases in summer low flows would be beneficial for this species.” 4) All of these considerations are highly speculative and Simpson does not believe it possible to predict”...

COMMENTS on the DRAFT ENVIRONMENTAL IMPACT STATEMENT

Response to Comment J1-98

The statement on the potential impacts of altered hydrology on southern torrent salamanders is based on professional experience and judgment of Green Diamond's biological staff, rather than those of USFWS. The Services are not aware of any other data available on this subject.

Response to Comment J1-99

Comment noted. Additional text has been added to EIS Section 1.5.3.1 to note review team participation by the California Department of Parks and Recreation and the National Park Service for some THPs.

Response to Comment J1-100

See Master Response 3 and the response to Comment J1-1.

Response to Comment J1-101

The subheading referred to is under the heading of Aquatic Habitat Conditions (EIS Section 3.4.4), which describes the channel and estuary conditions and status of covered species in each of the 11 HPAs. Long-term sediment movement as a result of geology, landform development, and hillslope mass wasting characteristics within this and other HPAs was presented under EIS Section 3.2.4 (Geology, Topography, and Geomorphology of the HPAs and Rain-on-Snow Areas) earlier in Chapter 3 of the EIS. Information from the studies by RNSP and USGS in Redwood Creek have been included in the write-up on the Redwood Creek Hydrologic Unit in EIS Section 3.2.4.

Response to Comment J1-102

Section 106 of the National Historic Preservation Act is described in EIS Section 1.5.2.2; that discussion is not repeated in Sections 3.10 and 4.10. It is not necessary to revise the EIS (as the commenter recommends) to comply with the requirements for Section 106. Although an EIS can be used in support of Section

J1-99 [DEIS 1.5.3.1 Environmental Review Process (p. 1-9): Review team also includes the Department of Parks and Recreation or the National Park Service, depending on the location of the THP.

J1-100 [DEIS 3.1 Introduction: "The affected environment is referred to in this EIS as the Primary Assessment Area, which is the focus of the impacts analysis presented in Chapter 4." In order to adequately address cumulative effects, as required by NEPA, the affected environment must address resource conditions downstream of Simpson property such as the aquatic habitat and channel conditions in lower Redwood Creek.

J1-101 [DEIS 3.4.4.5 Redwood Creek Hydrologic Unit (pg 3-72): Under the Channel and Estuary Conditions subheading, it states: "No channel or habitat typing assessments, long-term channel monitoring or LWD surveys have been conducted by Simpson in the HPA." Even though Simpson has not collected such data, RNSP and USGS have studied long-term sediment movement in Redwood Creek. Such information should be incorporated into the NEPA assessment of the affected environment.

J1-102 [DEIS 3.10 and 4.10 Cultural Resources: These sections do not clearly state the responsibility of the lead agencies to comply with Section 106 of the National Historic Preservation Act by the issuance of a Federal permit. As a result, the affected environment section for cultural resources may need to reflect the varying responsibilities to evaluate archeological and historic sites under FPRs vs. the evaluation of historic properties as defined under Section 106 of the National Historic Preservation Act. In addition, Section 4.10 should clarify these responsibilities for the proposed action and alternatives.

J1-103 [DEIS 3.10 Cultural Resources - Affected Environment: While the affected environment section describes Native American peoples of the northwest coast, it does not adequately describe the types of historic properties that could be affected by the proposed action or alternatives. A brief summary of the prehistory and history of the project area should be included in this section in order to provide a context for identification of the types of historic properties that could be affected by the proposed action or alternatives.

J1-104 [Descriptions of the Native American people of the northwest coast in this section are simplistic and largely outdated. Please avoid use of past tense in these discussions, Native people continue to occupy and use their ancestral territories. For example, revise the following sentence to present tense, "The earliest inhabitants of the north coast region [are] thought to be ancestors of the Karok..." (DEIS 3.10, pg 3-144, p1, s1).

J1-105 [DEIS 3.10.1 Tolowa (pg 3-145): Revise to present tense, "The historical territory of the Tolowa [comprises] most of present-day Humboldt County."

J1-106 [DEIS 3.10.2 Yurok: Same comment as section 3.10.1 The Yurok continue to occupy their ancestral territory. Avoid the past tense here.

J1-107 [DEIS 3.10.3: Revise to present tense, "The historic center of Wiyot culture [is] around Humboldt...."

106 compliance activities, protection of cultural resources under Section 106 is an independent requirement of the Services associated with Permit issuance.

Response to Comment J1-103

The discussion of cultural resources in EIS Section 3.10 is limited because Green Diamond would continue to implement the CFPR requirements for site-specific review prior to approval of any THP (See response to Comment J1-9) and site-specific review under the California Environmental Quality Act (CEQA) as appropriate. The potential for an impact would remain the same under all alternatives, including the No Action Alternative. Further, the Services are conducting cultural review through a separate process under National Historic Preservation Act Section 106.

Response to Comment J1-104

Comment noted. Statements in the EIS have been revised to avoid the past tense (see also responses to Comments J1-105, J1-106, and J1-107). The sentence referred to by the commenter in EIS Section 3.10 has been revised as follows.

“The earliest inhabitants of the north coast region ~~were~~are thought to be ancestors of the Karok...”

Response to Comment J1-105

As recommended by the commenter, this sentence has been revised as follows.

“The historical territory of the Tolowa ~~comprised~~comprises most of present-day Del Norte County...”

Response to Comment J1-106

As recommended by the commenter, this sentence has been revised as follows.

“The Yurok historically occupied and continue to occupy the lower reach of the Klamath River from approximately Bluff Creek downstream to the river’s mouth at Requa...”

Response to Comment J1-107

As recommended by the commenter, this sentence has been revised as follows.

“The historical center of Wiyot culture ~~was~~is around Humboldt and Arcata Bays, from Little River south to the Bear River Mountains...”

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Response to Comment J1-108

As recommended by the commenter, the first bullet in EIS Section 4.10.2 has been revised as follows.

“Conduct an archaeological record search at the ~~Northwest Information Center (Sonoma State University)~~North Coast Information Center (Yurok Tribe, Culture Department)”.

Response to Comment J1-109

A definition for a Riparian Management Zone (RMZ) has been added to EIS Chapter 7 (Glossary) as follows:

“A riparian buffer zone on each side of a Class I or Class II watercourse that receives special treatments to provide temperature control, nutrient inputs, channel stability, sediment control, and LWD recruitment.”

A definition for a Slope Stability Management Zone (SMZ) has been added to EIS Chapter 7 as follows:

“The outer zone of an SSS zone.”

J1-108

DEIS 4.10.2 No Action Alternative (pg 4-112, first bullet): The Information Center for Humboldt and Del Norte Counties is the North Coast Information Center located at the Yurok Tribes, Culture Department in Klamath, California. 15900 Highway 101 N. Klamath, California 95548. Other Information Centers would be contacted for any projects not within Humboldt and Del Norte Counties.

J1-109

DEIS Chapter 7 Glossary (pg 7-10): Definitions for RMZ and SMZ are not defined in the glossary.

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Local and Regional Agencies and Governments: R

Letter - R1. Signatory -Dept. of Parks/Rec-
N. Coast Redwoods District.



State of California • The Resources Agency

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NOV 20 2002

Nat'l Marine Fisheries SVC
Arcata, CA

November 19, 2002

Mr. James Bond
National Marine Fisheries Service
1655 Heindon Road
Arcata, CA 95521

Dear Mr. Bond:

Thank you for the opportunity to comment on the Simpson Resource Company's Aquatic Habitat Conservation Plan. The North Coast Redwoods District seeks to work cooperatively with neighboring landowners in order to preserve and protect our extraordinary natural, cultural and aesthetic resources.

The Department of Parks and Recreation is mandated to provide for the health, inspiration, and education of Californians by protecting its most valued resources and by providing opportunities for high-quality outdoor recreation. The North Coast Redwoods District is charged with the protection, preservation, and perpetuation of the outstanding natural, cultural, and aesthetic values found within and surrounding twenty-two State Park units in Del Norte, Humboldt, and Mendocino counties.

Our review of these documents was conducted in conformance with our Departments mission as describe above. As a steward of these lands it is our responsibility to preserve and protect these ecosystems in their most preferred state. The North Coast Redwoods District is therefore very concerned about adjacent land management practices that may adversely affect the natural and cultural resources within our charge.

Our attached comments address both general and specific issues relating to the Aquatic Habitat Conservation Plan and the Draft Environmental Impact Assessment. Should you have further questions please contact me or Senior Resource Ecologist Jay Harris at 707-445-6547 ext. 19.

Sincerely,

John Kolb
District Superintendent

Attachment

Letter - R1

Page 2

Response to Comment R1-1

Comment noted.

Response to Comment R1-2

The Plan supplements the requirements of other applicable legal requirements (see AHCP/CCAA Section 1.4). Therefore, Plan approval and Permit issuance will not excuse Green Diamond from any legal obligation to comply with requirements associated with Special Treatment Areas (STAs) or CEQA. Where CEQA is triggered, Green Diamond will be required to comply with its provisions, which may include assessment or mitigation of impacts on cultural, visual, or recreational resources. Any needed arbitration on the issues identified in the comment would properly be addressed in the State THP review process.

Response to Comment R1-3

The “baseline” has been discussed in Master Response 1. The Services note that, as explained in the biological goals and objectives Section (AHCP/CCAA Section 6.1) the Plan has a goal of improving habitat conditions for the covered species.

Response to Comment R1-4

Enforceability has been discussed in Master Response 14.

Response to Comment R1-5

Comment noted. AHCP/CCAA Section 1.3.2.2 has been revised as follows:

CALIFORNIA STATE PARKS – NORTH COAST REDWOODS DISTRICT
Comments on Simpson Resource Company's Aquatic HCP
and Draft Environmental Impact Statement
November 19, 2002

General Comments Simpson's Aquatic HCP

The North Coast Redwoods District (NCRD) considers itself a significant stakeholder when actions on adjacent lands have the potential to negatively impact the natural, cultural, visual, and recreational values of its lands. Neither the AHCP nor the DEIR address the significance of the covered lands to state parks. The documents do not address appropriate practices within Special Treatment Areas (STA), methods of assessing and mitigating cultural, visual, and recreational impacts, or means of arbitration.

The AHCP uses the existing habitat conditions as an acceptable baseline to assess the success of the management objectives. The NCRD believes that the existing conditions, many of which are considered adverse for the covered species, are an inappropriate baseline. The goal of the AHCP should be to improve habitat conditions within the covered lands, not to maintain the existing adverse conditions. A more appropriate method would be to develop a matrix of the preferred habitat conditions for the covered species and use them as the baseline from which management activities are judged.

The NCRD is also concerned about the lack of enforceability in the AHCP. Many of the measures are open to interpretation or are only implemented if determined necessary by Simpson Resource Company (SRC). There is no recourse to allow the USFWS or NMFS to disagree with SRC findings.

Specific Comments on Simpson's Aquatic HCP

Page 1-5, Sec 1.3.2.2. Eligible Plan Area: Initial Plan Area and Adjustment Area
¶ 3 – Text needs to be changed to indicate the change of ownership of the lands in Del Norte County formally owned by the Stimson Lumber Company. These lands are now owned and managed by the California Department of Parks & Recreation. Similar changes need to be made throughout the documents, tables, and maps.

The NCRD is concerned that there is insufficient information regarding the covered species status, habitat and watershed conditions, geology, and road conditions in the Adjustment Area to adequately determine the potential take of listed species and significant adverse affects to non-listed species. The NCRD believes that these areas should not be included in the ITP until such information is compiled and analyzed.

Page 2-6, Sec. 2.4. Timber Stand Regeneration and Improvement

“ . . . Other adjacent ownerships include industrial timberlands managed by Sierra Pacific Industries, ~~Stimson Lumber Company~~, Soper-Wheeler Company, Pacific Lumber Company, and other private holdings. . . . ”

Response to Comment R1-6

Adjustment Area lands are commercial timberland acreage within the 11 HPAs that are not within Green Diamond’s ownership or the Plan Area on any given date during the term of the Plan. The Adjustment Area includes lands that are eligible for addition to the Plan Area (as covered lands) through acquisition subject to the limitations imposed by the Plan and IA paragraph 11. IA paragraph 11 would require Green Diamond to submit to the Services a description of the lands it intends to add, along with a summary of relevant characteristics they share with existing Plan Area lands within that HPA. In general, it is appropriate to presume that all commercial timberlands within each HPA share similar relevant characteristics and, therefore, that adding such lands to the Plan Area during the term of the Permits would not likely result in adverse effects on the covered species different from those analyzed in connection with the original Plan. However, this presumption is not conclusive but is rebuttable through the process outlined in the IA. The Services may object to the inclusion of the lands within the Plan Area within 60 days of receipt of Green Diamond’s submittal. No lands will be added to the Plan Area until concurrence is reached, except pursuant to the amendment process set forth in IA paragraph 12, which itself requires Service approval. Therefore, if the Services believe that Adjustment Area lands are sufficiently different from Plan Area lands, incidental take Permit authorization will not be extended to activities thereon under the Plan or these Permits.

Response to Comment R1-7

See AHCP/CCAA Section 2.4 regarding timber stand regeneration and improvement. State forestry laws include special provisions to protect “Special Treatment Areas,” which include areas adjacent to State and National Parks. See 14 Cal. Code Regs. section 913.4(a). According to

this provision, “*Special consideration in Special Treatment Areas shall be given to selection of regeneration method or intermediate treatment compatible with the objectives for which the special treatment area was established.*” Further, the State forestry laws (14 Cal. Code Regs. section 921) also address special operating practices and the selection of silvicultural methods in Coastal Commission Special Treatment Areas (CCSTAs). Specifically, section 921.3(c) addresses use of the clear cutting silvicultural method in CCSTAs. Limits include specific timber stand conditions where the clearcut method may be applied, limitation on the size of clearcut units to a maximum of 10 acres, avoidance of straight line unit boundaries, and adjacency (time between adjacent harvests) restrictions to 10 years between harvests. Upon issuance of the Permits, these existing laws and regulations will still be enforceable by the various State and Federal authorities that oversee them.

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Response to Comment R1-8

The Services consider such a task unnecessary for purposes of review and approval of the Plan and Permits under the ESA.

Response to Comment R1-9

Comment noted. The words “an offshore boundary” have been deleted from AHCP/CCAA Section 4.2.1.4, paragraph 1:

“Northern coastal California and the adjacent offshore area constitute one of the most seismically active areas in the State (Cashman et al. 1995). This entire area of northwest coastal California is subject to high hazard from potential earthquakes on several onshore faults and the region falls within the Cascadia subduction zone, an area thought to be capable of great (magnitude 8 to 9) earthquakes (CA DMG 1996). The high level of tectonic activity in the region is also attributed to the proximity of the Mendocino triple junction (McKenzie and Morgan 1969), ~~an offshore boundary~~ (located south of the planning area) which separates three major crustal plates and is the northern terminus of the San Andreas Fault (see Figure 4-1).”

Response to Comment R1-10

Faults are identified for disclosure purposes only. Fault-related hazards have not been addressed by specific conservation measures due to the difficulties in characterizing the possible range of spatial and temporal effects associated with seismic events and the overwhelming range of possible scenarios associated with fault-related hazards and ground shaking or rupture in the Plan Area. Because of these factors, the likelihood

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¶ 3, where Clear-cuts will be an exception – Add bullet for Special Treatment Areas adjacent to State and National Parks and within viewsheds of State and National Parks. The NCRD believes that clear-cuts are very seldom an appropriate silvicultural practice adjacent to its lands. Furthermore, the NCRD believes that there are silvicultural practices such as selection, irregular edges, or appropriate visual buffers, which are more appropriate within the viewsheds that define the context of State Parks.

R1-8

Page 4-13, Sec. 4.2.1.3.3. Stream Terrace Deposits.
Recommend description of consolidation for all Quaternary deposits (see 4.2.1.3.4)

R1-9

Page 4-14, Sec 4.2.1.4. Seismic Hazards, Faults and Structural Relationships.
¶1 Current thinking places Mendocino Triple Junction near Petrolia.

R1-10

¶2, How do fault related geologic hazards zones affect management? If they have no impact why are they identified? Recommend that these hazards be incorporated into management of the property.

R1-11

Page 4-15, Sec 4.2.1.4. Seismic Hazards, Faults, and Structural Relationships
South Fork Fault. Recommend that health hazards presented by ground disturbance of soils associated with ultramafic rocks be addressed.

R1-12

Indian Field Ridge Fault. Do faults crop out or strata associated with the fault? Just trying to inhibit viruses in the literature.

R1-13

Page 4-17, Sec. 4.2.2, Landform Development
¶ 3. Recommend using the term “well indurated” to describe sharp crested sandstone in light of subsequent discussion of poorly indurated sandstone topography.

R1-14

Page 4-20, Sec. 4.2.3.2.1. Translational/Rotational Landslides
These landslides are only discussed under deep-seated landsliding. They also can occur at shallow depths. Recommend further discussion of this issue, in particular with respect to roadcuts, quarries, etc.

R1-15

Page 4-22, Sec. 4.3. Methods and Results of Studies in the Original Assessed Ownership
¶ 2. If data was only collected on lands owned by Simpson, then how can an adequate assessment of habitat and populations be made for the other lands? Without supporting data an acceptable level of take cannot be established.

R1-16

Page 4-24, Sec. 4.3.1.1. General Water Temperature Monitoring
¶ 2. 17.4°C is in excess of this temperature and is also well above the preferred range of the southern torrent salamander (Welsh & Lind 1996).

that tree retention or other feasible conservation measures will mitigate such effects is not possible to quantify at this time.

Response to Comment R1-11

Comment noted. However, no specific measures associated with health hazards from ultramafic rocks have been incorporated into the Plan.

Response to Comment R1-12

The text in AHCP/CCAA Section 4.2.1.4 has been revised as follows:

“Indian Field Ridge Fault. The surface trace of the Indian Field Ridge fault ~~erops out~~ is found to the west of the South Fork fault and is marked in places by narrow zone of unmetamorphosed pervasively sheared rocks (Cashman et al. 1995).”

Response to Comment R1-13

AHCP/CCAA Section 4.2.2 has been revised as follows:

“Well indurated ~~S~~sandstone rock masses weather to granular (sandy and silty) soil that is stable enough to form steep slopes. The stability and homogeneity of such soils and rock masses tend to result in steep, sharp-crested topography dissected by a regularly spaced array of straight, well-incised sidehill drainages (McLaughlin et al. 2000).”

Response to Comment R1-14

AHCP/CCAA Section 4.2.3 states that the types of landslides described in the Plan are based on Crudden and Varnes (1996) and Note 50 of the California Department of Conservation, Division of Mines and Geology. Note 50 characterizes translational/rotational landslides as having “a somewhat cohesive slide mass and a relatively deep failure plane when compared to that of a debris slide of similar aerial extent”. On this basis, the Services considered the description of translational/rotational landslides primarily as a deep-seated landslide, as provided in

AHCP/CCAA Section 4.2.3.2.1, to be reasonable and adequate for purposes of Plan review and approval. This does not preclude the existence of shallow translational/rotational landslides, including along road cuts and at quarries.

The effects of road construction on slope stability is acknowledged and discussed in AHCP/CCAA Section 5.3.2. Specific conservation measures that apply to road cut slopes may be found in AHCP/CCAA Sections 6.2.3.5.7, 6.2.3.5.12, 6.2.3.5.13, 6.2.3.5.14, and 6.2.3.5.15.

Response to Comment R1-15

Quantifying take has been discussed in Master Response 9. Assessment of habitats and populations in the 11 HPAs is based on the best available science, which includes ownership-specific data and extrapolation therefrom and modeling of results across similar landscapes (see responses to Comments G10-58 and G10-51, among others). The analysis reflected in the Plan is sufficient to establish the mechanism for adding lands to the Plan Area; as noted above, the Services may object to the addition of any particular parcel out of concern that such land is not similar enough to Plan Area lands so as to justify its addition-both in terms of habitat condition and potential impacts to covered species should the land be added.

Response to Comment R1-16

The stated temperature threshold (17.4 °C) only applies to Class I streams. There are no southern torrent salamanders in these larger streams. The temperature threshold for southern torrent salamanders is much lower, but the specific temperature is a function of basin size.

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Response to Comment R1-17

The Plan is designed to minimize and mitigate impacts associated with the Plan and Permits to avoid contributing to negative environmental conditions; in fact, the Services believe the Plan will provide for an incremental improvement in such conditions compared to the current baseline condition and the No Action Alternative. Refer to Master Response 3 and, among others, the response to Comment G6-42. The status of certain waterbodies within the Plan Area as water quality-impaired has been discussed in AHCP/CCAA Section 4.3.6 and depicted in Table 4-3.

Response to Comment R1-18

Comment noted. The commenter appears to have taken one statement in isolation. The preceding sentence acknowledges the contribution of groundwater input to stream temperatures independent of timber harvest. The Services agree with the commenter that a sample size of four is insufficient to be conclusive. The Class II BACI study will continue as provided in AHCP/CCAA Section 6.2.5.

Response to Comment R1-19

Air temperature was not measured at any of these BACI sites. All of the BACI sites are within the influence of coastal climate and are primarily influenced by marine air masses. As such, the ambient air temperatures at these sites are moderated by the cool coastal climate of the region. Rainfall predominantly falls during the winter months and coastal marine fog is common during the dry summer months. There were no effects from snow on any of

- R1-17 [¶ 3. Stevens Creek is listed as temperature impaired in 1999-2000. How will monitoring address management adaptation where there are multiple industrial timberland owners harvesting in an impaired watershed? Recommend that the monitoring plan develop a strategy to specify the contribution of the various ownerships in these mixed watersheds.
- R1-18 [Page 4-26, Sec. 4.3.1.2. Class II BACI Study
¶ 2. State Parks is unclear what data exists to support the claim in the last sentence that the cumulative effect of timber harvest on water temperature is zero because some streams in the BACI study showed an increase and some a decrease in water temperature. It appears that the sample size of 4 may be insufficient and it assumes that in any given watershed that there are an equal number of streams with and without ground water input.
- R1-19 [¶ 4. Recommend discussion of air temperature and confirmation or denial of snow impacts at the measured sites.
- R1-20 [Page 4-27, Sec. 4.3.2. Channel and Habitat Typing Assessments
1st Bullet. The sentence does not make sense. Please clarify.
- R1-21 [Page 4-29, Sec. 4.3.3. LWD Assessments
¶ 1. It's Prairie Creek State Park not National Park. Please correct.
- R1-22 [Clarify the units of LWD volume in figure 4.4B (also see figure 4.7B in 4.4.1.6.3).
- R1-23 [Page 4-33, Sec. 4.3.5. Assessment of Sediment Delivery From Class II Watercourses
¶ 1. Since most of the sediment production in Class III watercourses was limited to those occurring in unconsolidated geology are retention standards being proposed for those areas? The term "unconsolidated geology" is not a preferred geological term as it is extremely vague and can contain numerous different geologic types. Recommend the document be more specific in regards to the areas described as unconsolidated geology.
- R1-24 [Are not these areas of unconsolidated geology the same areas where species such as the southern torrent salamander occur? If so, does this not warrant additional protective measures of Class III watercourses in these areas?
- R1-25 [¶ 2. A similar question is posed for Class III watercourses with steep gradients and banks. Are tree retention standards proposed for these areas?
- R1-26 [¶ 3. Selecting the Little River HPA for the Class III BACI experiment raises the following questions: 1) how representative of the ownership is this HPA in regards to soils, slope, and gradient, and 2) does this HPA contain unconsolidated soils?
- R1-27 [Page 4-39, Sec. 4.3.6. Section 303(d) Impaired Watersheds

these study sites. These locations are all characterized by rainfall-dominated hydrology and not rain-on-snow hydrology. They are coastal low elevation sites with the maximum distance from the coast being 12.84 miles (site 6001). The maximum elevation of the four sites was the D2010 site at 1250 feet.

Response to Comment R1-20

The referenced bullet point in AHCP/CCAA Section 4.3.2 has been revised as follows:

“Mean canopy closure for the assessed streams ranged from 36- to 99 percent ~~and diminishes somewhat as watershed area increases of the assessed streams had~~ with an inverse relationship between water temperature and watershed area. Of the assessed streams, 69 percent had a mean canopy closure greater or equal to 80 percent (Figure 4-3[A]).”

Response to Comment R1-21

Section 4.3.3 will be changed to correctly reflect the name of Prairie Creek State Park:

“LWD assessments were conducted on 20 streams: 16 streams were assessed by Green Diamond, and 4 were assessed by Louisiana Pacific (LP). In addition, a cooperative effort by Redwood National Park and NMFS inventoried in-channel LWD in 4.3 miles of Prairie Creek in Prairie Creek ~~State National~~ Park (Redwood Creek HPA). Prairie Creek is considered to be the best remaining example of a relatively undisturbed watershed dominated by old growth redwood forest.”

Response to Comment R1-22

The index of LWD volume is a unitless index intended to allow comparison of LWD between streams in the Plan Area within different HPAs. It is not a true volume, but instead is a representative index of volume. At the time of the LWD surveys, LWD pieces were categorized by their length (>20 feet and >6<20 feet) and maximum diameter. Then, a volume index was calculated by multiplying the mean diameter class times the mean length class. The index of volume in the Plan is based on

the instream average pieces per 100 feet of stream. See Appendix C-2.1.2 of the Plan, where the index of LWD volume is discussed.

Response to Comment R1-23

Conservation measures to maintain the riparian function in Class III watercourses are provided in AHCP/CCAA Sections 6.2.1.5 through 6.2.1.7 and are described in AHCP/CCAA Section 6.3.1.3. These measures include provisions for equipment exclusion to minimize soil disturbance, existing LWD retention to mitigate sedimentation, restricting fire ignition to minimize bare soil exposure, as well as special provisions for Class III watercourses with steep side slopes, which are described as Tier B Protection Measures.

Class III, Tier B Protection Measures (AHCP/CCAA Section 6.2.1.7) would be triggered by the gradient of slopes leading to a Class III watercourse, depending on HPA (or initial default HPA Group). The slope gradient thresholds for the various initial default HPA Groups would be the same as for SSS conservation measures, which were developed from empirical data from sites within the Plan Area. Therefore, the conservation measures are considered sensitive to geologic conditions. Class III, Tier B Protection Measures include: (1) equipment exclusion and ignition prohibition zones; (2) existing LWD retention, hardwood and sub-merchantable conifer retention except as necessary to safely fall or yard merchantable trees; (3) merchantable conifer retention where such trees act as control points or contribute to maintaining bank stability; and (4) one retained merchantable conifer per 50 feet of stream length.

Unconsolidated geology, as the term is used in the Plan, represents a range of rock types including relatively soft bedrock types such as Wildcat Group rocks and Falor Formation and equivalent formations as well as marine terraces. While this usage of the term may not be universal among all professional and academic literature, the Services believe that it is understandable and acceptable for the descriptive context in which it is used and adequate for purposes of Plan review.

Response to Comment R1-24

Southern torrent salamanders may occur in locations of unconsolidated geology. Additional protective measures for Class III watercourses are not proposed in these areas. The selection of specific prescriptions, including whether to include additional protective measures for Class III watercourses, is a matter of the Permit applicant's discretion (HCP Handbook at 3-19). The Services' role during the development of a conservation program is to "*be prepared to advise,*" and to judge its consistency with the ESA approval criteria as a whole once the application is complete (HCP Handbook at 3-6 and 3-7). The ESA does not require that any particular measure be adopted or imposed, but only that its criteria for Permit issuance be met. Issuance criteria have been discussed in AHCP/CCAA Section 1.4.1, EIS Section 1.3 and Master Response 8. The Services believe, based on the analysis provided in the Plan and EIS, that implementation of the Operating Conservation Program meets ESA requirements.

Response to Comment R1-25

Class IIIs with steep gradients and banks would get greater protection either through the Tier B measures (AHCP/CCAA Section 6.2.1.7) or headwall swale measures (AHCP/CCAA Section 6.2.2.2). The specifics would depend on whether or not the area met the definition of "headwall swale," which is provided in AHCP/CCAA Section 10.2.

Response to Comment R1-26

These Class III BACI experiments were initiated in the Little River prior to the completion and approval of the Plan. The Little River is believed to be representative of portions of the Plan Area, but certainly not all of it. Once the Plan is approved, these same experiments would be implemented in the three additional experimental watersheds that are identified in AHCP/CCAA Section 6.2.5.4. The Ryan Creek watershed is one of the experimental watersheds and the one that is representative of areas with a high proportion of unconsolidated geologic materials. Collectively, the four experimental watersheds should be highly representative of the entire Plan Area.

Response to Comment R1-27

The TMDL process is separate from the ESA Section 10 Permit process. However, obligations imposed as a result of Plan approval and issuance of the Permits will supplement requirements imposed by all other applicable laws (see AHCP/CCAA Section 1.4) and will not excuse Green Diamond from complying with applicable requirements relating to TMDLs established under the Federal CWA.